

## CLAIMS

1. In a data processing system having a windows-based graphical user interface (GUI), the improvement  
5 comprising:

an integrated visual design environment having a first display panel in which a structured data source is displayed, and a second display panel for displaying a document being designed from the structured data source;

10 code responsive to selection and positioning in the second display panel of given design elements or attributes from the structured data source for generating a meta stylesheet; and

code for automatically generating from the meta  
15 stylesheet two or more stylesheets from within the integrated visual design environment, wherein each of the stylesheets is useful for generating the document being designed in a given output format.

20 2. In the data processing system as described in Claim 1 further including:

code responsive to a given selection for selectively displaying a preview of a given one of the two or more stylesheets.

25 3. In the data processing system as described in Claim 1 wherein the structured data source is an XML document.

30 4. In the data processing system as described in Claim 1 wherein the structured data source is a Document Type Definition (DTD).

5. In the data processing system as described in Claim 1 wherein the structured data source is an XML Schema.

5

6. In the data processing system as described in Claim 1 wherein the structured data source is a relational database.

10 7. In the data processing system as described in Claim 1 wherein the structured data source is an EDI document.

15 8. In the data processing system as described in Claim 3 wherein the two or more stylesheets include an XSLT stylesheet for transforming the XML document into HTML.

20 9. In the data processing system as described in Claim 3 wherein the two or more stylesheets include an XSLT stylesheet to facilitate transformation of the XML document into PDF via XSL:FO.

25 10. In the data processing system as described in Claim 3 wherein the two or more stylesheets include an XSLT stylesheet for transforming the XML document into WML.

30 11. In the data processing system as described in Claim 1 wherein the integrated visual design environment also includes a display panel for manipulating schema elements and attributes.

12. In the data processing system as described in  
Claim 11 wherein the display panel for manipulating schema  
elements and attributes includes a text style display  
window and an associated control mechanism to provide text  
5 formatting.

13. In the data processing system as described in  
Claim 11 wherein the display panel for manipulating schema  
elements and attributes includes a block system display  
10 window and an associated control mechanism to provide block  
formatting.

14. In the data processing system as described in  
Claim 1 further including:  
15 code responsive to a given selection for selectively  
displaying a preview of an output document rendered as a  
result of applying a given one of the two or more  
stylesheets.

20

15. A data processing system having a windows-based graphical user interface (GUI), comprising:

a display environment having a first display panel in which a structured data source is displayed, and a second  
5 display panel for displaying a document being designed from the structured data source, wherein the data source is selected from a set of data sources including: an XML document, an XML schema, a DTD, an EDI document, a relational database, and a Web service;

10 code responsive to selection and positioning in the second display panel of given design elements or attributes from the structured data source for generating given program code; and

code for automatically generating from the given  
15 program code two or more program code instances from within the integrated visual design environment, wherein each of the program code instances is useful for generating the document being designed in a given output format.

20 16. The data processing system as described in Claim 15 wherein a given program code instance is an XSLT stylesheet.

25 17. The data processing system as described in Claim 15 wherein a given program code instance is code written in a programming language selected from a set of available language templates.

30 18. The data processing system as described in Claim 15 further including:

code responsive to a given selection for selectively displaying a preview of a given one of the program code instances.

5        19. The data processing system as described in Claim  
15 further including:

code responsive to a given selection for selectively displaying a preview of an output document rendered as a result of applying a given one of the program code

10 instances.

20. A display method operative in a data processing system having a windows-based graphical user interface (GUI), comprising:

displaying, in juxtaposition, a structured data source  
5 and a document being designed from the structured data source, wherein the data source is selected from a set of data sources including: an XML document, an XML schema, a DTD; an EDI document, a relational database, and a Web service;

10 responsive to selection and positioning in the document being designed of given design elements or attributes from the structured data source, generating given program code;

automatically generating from the given program code  
15 two or more program code instances, wherein each of the program code instances is useful for generating the document being designed in a given output format; and

selectively displaying a preview of an output document rendered as a result of applying a given one of the program  
20 code instances.